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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/602,345	06/23/2000	William S. Oakley	053313.P017	1324

7590

05/02/2002

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EXAMINER

PHAM, HAI CHI

ART UNIT

PAPER NUMBER

2861

DATE MAILED: 05/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/602,345

Applicant(s)

OAKLEY, WILLIAM S.

Examiner

Hai C Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities:
 - Line 10, "VCSEL" should read --Vertical cavity Surface Emitting Lasers (VCSEL)-- to clearly define the specific type of laser source;
 - Line 10, "the reading array of VCSEL" should read --the reading array of modulated light sources, which comprises an array of Vertical cavity Surface Emitting Lasers (VCSEL)--.Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-13, 15, 16, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jewell et al. (U.S. 5,526,182) in view of Jiang et al. (U.S. 5,831,960).

Jewell et al. discloses an optical recording system comprising an array of modulatable light sources (array 35, Fig. 7,) which can perform both reading and writing data (col. 5, lines 59-63,) and an objective lens (focusing lens 47) positioned relative to said array of modulatable light sources such that said objective lens is capable of

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focusing at least one light beam from said array of modulatable light sources on a target medium (optical recording medium 8,) the array of modulatable light sources comprising an array of VCSELs (Fig. 7,) and a detector (48 and/or 64) to receive a set of one or more beams, the set of one or more beams having emanated from the array of VCSEL and the set of one or more beams having reflected from the target medium.

However, Jewell et al. fails to teach the reading and writing array of light sources being distinct from each other, and the distinct arrays being formed on the same substrate.

Regardless, Jiang et al. discloses an integrated vertical cavity surface emitting laser pair (VCSEL 12 and 14) formed on the same substrate (16), with the high power VCSEL (12) being used as a writing laser source and the low power VCSEL (14) being used as a reading laser source, the pair being separated by a center-to-center distance of more than 40 μm .

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the device of Jewell et al. with the aforementioned teaching of Jiang et al. Doing so would allow for optimal performance in the data write mode while providing a VCSEL having a minimal thickness for data read operation.

Jewel et al. further teaches the modulatable light sources being spaced at regular intervals (Figs. 1-4), the writing array of the modulatable light sources comprising at least one line of modulatable light sources positioned at an angle relative to a direction of movement of said target medium (Fig. 1), each modulatable light source

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being associated with a separate path on said target medium (Fig. 5), a polarizing beam-splitter (38) located between the light sources and the objective lens, and a circularly polarizing element as a quarter wave plate (39) located adjacent said polarizing beam-splitter.

4. Claims 17, 20, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jewell et al. in view of Jiang et al., as applied to claims 1 and 11 above, and further in view of Lee et al. (U.S. 4,965,780).

Jewell et al., as modified by Jiang et al., discloses all the basic limitations of the claimed invention except for the writing and reading arrays of light sources being located on separate substrate and the second beam splitter.

However, Lee et al. discloses an optical head for writing data to and reading data from an optical recording medium, which includes two distinct recording and reproducing light sources of different wavelengths whose light beams are combined at the first beam splitter (30), and further includes a second beam splitter (32) located between the first beam splitter and the objective lens (36) for directing the reflected light beams toward the set of detectors.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the device of Jewell et al., as modified by Jiang et al., with the aforementioned teaching of Lee et al. since it is known in the art that the two distinct light sources can be used to write data to and to read data from the target medium, the implementation of which would require only routine skill in the art.

5. Claims 14 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jewell et al. in view of Jiang et al. and Lee et al., as applied to claim 1 above, and further in view of Oonishi et al. (U.S. 5,295,125).

Jewell et al., as modified by Jiang et al. and Lee et al., discloses all the basic limitations of the claimed invention except for the achromatic objective lens and the adjustment device.

However, Oonishi et al. discloses an optical head device for recording and reproducing for an optical medium, which includes an achromatic objective lens (11) and an adjustment device (focusing control system) for correcting the deviation of the converging point of the laser beam on the optical medium due to the difference in refractive index of the plural kinds of optical media.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the device of Jewell et al., as modified by Jiang et al. and Lee et al., with the aforementioned teaching of Oonishi et al. Doing so would allow the device to be adapted to different types of optical media.

Response to Arguments

6. Applicant's arguments with respect to claims 1-22 have been considered, and are moot in view of the new grounds of rejection as stated above.

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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C Pham whose telephone number is (703) 308-1281. The examiner can normally be reached on T-F (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow can be reached on (703) 308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



HAI PHAM
PRIMARY EXAMINER

April 30, 2002